SEQUENCE LISTING

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<120> PREVENTIVES/REMEDIES FOR CANCER

<130> P04-222PCT

<150> JP 2002-240830
<151> 2002-08-21

<150> JP 2002-363108
<151> 2002-12-13

<150> PCT/JP2003/010532
<151> 2003-08-20

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Thr Ala Ala Arg Pro Ala Gln Pro Thr Leu Trp Thr Ala Lys Leu Asp
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Pro Glu Ala Glu Lys Asp Lys Met Val Trp Glu Ile Leu Val Ser Glu
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Val Thr Val Asp Gly Gly Gly Ala Leu Val Glu Val Thr Glu His Val
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Pro Ala Pro Pro Ala Gln Ser Pro Glu Glu Pro Val Gly Ala Pro Ala

725 730 735

Val Gln Ser Ile Leu Val Ala Gly Glu Glu Asp Ile Arg Trp Val Cys

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Gly His Tyr Pro Pro Ala Asn Ser Ser Leu Ser Ser Arg Ser Glu Thr
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115 120 125
Glu Ala Ala Val Thr Pro Ala Glu Pro Tyr Ala Arg Val Leu Phe His
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Leu Lys Gly Gln Asp Trp Pro Pro Gly Ser Gly Ser Leu Pro Cys Ala
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225                 230                 235                 240
Pro Ala Asp Pro Pro Gln Tyr Gln Glu Val Pro Leu Asp Glu Ala Val
                245                 250                 255
Thr Leu Arg Val Pro Asp Met Pro Val Arg Pro Gly Gln Leu Phe Ser
            260                 265                 270
Ala Thr Leu Leu Leu Arg His Asn Phe Thr Ala Ser Leu Leu Thr Leu
        275                 280                 285
Arg Ile Lys Val Lys Lys Gly Leu His Val Thr Ala Ala Arg Pro Ala
    290                 295                 300
Gln Pro Thr Leu Trp Thr Ala Lys Leu Asp Arg Phe Lys Gly Ser Arg
305                 310                 315                 320
His His Thr Thr Leu Ile Thr Cys His Arg Ala Gly Leu Thr Glu Pro
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Asp Ser Ser Pro Leu Glu Leu Ser Glu Phe Leu Trp Val Asp Phe Val
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Val Glu Asn Ser Thr Gly Gly Gly Val Ala Val Thr Arg Pro Val Thr
        355                 360                 365
Trp Gln Leu Glu Tyr Pro Gly Gln Ala Pro Glu Ala Glu Lys Asp Lys
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Met Val Trp Glu Ile Leu Val Ser Glu Arg Asp Ile Arg Ala Leu Ile
385                 390                 395                 400
Pro Leu Ala Lys Ala Glu Glu Leu Val Asn Thr Ala Pro Leu Thr Gly
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Val Pro Gln His Val Pro Val Arg Leu Val Thr Val Asp Gly Gly Gly
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Ala Leu Val Glu Val Thr Glu His Val Gly Cys Glu Ser Ala Asn Thr
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Gln Val Leu Gln Val Ser Glu Ala Cys Asp Ala Val Phe Val Ala Gly
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Lys Glu Ser Arg Gly Ala Arg Gly Val Arg Val Asp Phe Trp Trp Arg
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Ser Asp Glu Ala Glu Arg Arg Ala Arg Gly Cys His Leu Gln Tyr Gln
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Arg Ala Gly Val Arg Phe Leu Ala Pro Phe Ala Ala His Pro Leu Asp
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Gly Gly Arg Arg Leu Thr His Leu Leu Gly Pro Asp Trp Leu Leu Asp
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Val Ser His Leu Val Ala Pro His Ala Arg Val Leu Asp Ser Arg Val
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Thr Ser Ile Glu Val Arg Ser Pro Leu Ser Asp Ser Ile Leu Gly Glu
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Gln Ala Leu Ala Val Thr Asp Asp Lys Val Ser Val Leu Glu Leu Arg
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Val Gln Pro Val Met Gly Ile Ser Leu Thr Leu Ser Arg Gly Thr Ala
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His Thr Val Ala Pro Ala Glu Leu Tyr Asp Arg Arg Asp Leu Gly Leu
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Ser Val Ser Ala Glu Glu Pro Gly Ala Ile Leu Pro Ala Glu Glu Gln
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Gly Ala Gln Leu Gly Val Val His Val Thr Glu Leu Glu Leu Gly Met
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Tyr Ala Leu Leu Gly Val Phe Cys Val Ala Ile Phe Ile Phe Leu Val
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Asn Gly Val Val Phe Val Leu Arg Tyr Gln Arg Lys Glu Pro Pro Asp
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Gly Glu Ala Pro Thr Leu Ala Pro Gly Pro Pro Gly Gly Thr Thr Ser
            820                 825                 830
Ser Ser Ser Thr Leu Ala Arg Lys Glu Ala Gly Gly Arg Arg Lys Arg
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Val Glu Phe Val Thr Phe Ala Pro Ala Pro Pro Ala Gln Ser Pro Glu
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Ala Ala Arg Pro Ala Gln Pro Thr Leu Trp Thr Ala Lys Leu Asp Arg
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Phe Lys Gly Ser Arg His His Thr Thr Leu Ile Thr Cys His Arg Ala
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Arg Arg Asp Leu Gly Leu Ser Val Ser Ala Glu Glu Pro Gly Ala Ile
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Arg Gln Val Ala Gly Ser Val Gly Gly Asn Thr Gly Val Arg Gly Lys
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<211> 1782
<212> DNA
<213> Homo sapiens

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<212> DNA
<213> Homo sapiens

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<400> 10

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        35                  40                  45
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Gln Val Leu Gln Val Ser Glu Ala Cys Asp Ala Val Phe Val Ala Gly
65                  70                  75                  80
Lys Glu Ser Arg Gly Ala Arg Gly Val Arg Val Asp Phe Trp Trp Arg
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Leu Arg Ile Glu Leu Thr Asp Thr Thr Leu Glu Gln Val Arg Gly Trp
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Ala Ser Leu Glu Gly Gly Arg Val Val Val Gly Arg Glu Pro Gly Val
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Trp Leu Gly Thr Asp Gln Glu Glu Leu Ser Arg Gln Leu Asp Arg Gln
515 520 525
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530 535 540
Gly Gly Gly Glu Ala Pro Thr Leu Ala Pro Gly Pro Pro Gly Gly Thr
545 550 555 560
Thr Ser Ser Ser Ser Thr Leu Ala Arg Lys Glu Ala Gly Gly Arg Arg
565 570 575
Lys Arg Val Glu Phe Val Thr Phe Ala Pro Ala Pro Pro Ala Gln Ser
580 585 590
Pro Glu Glu Pro Val Gly Ala Pro Ala Val Gln Ser Ile Leu Val Ala
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<211> 1917
<212> DNA
<213> Homo sapiens

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cgagaaggaa accag 2235

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<212> DNA
<213> Artificial Sequence

<220>
<223> Designed oligonucleotide

<400> 13
agaccacacc attgaccaag 20

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Designed oligonucleotide

<400> 14
gaaccagtta ccacaccaga 20

<210> 15
<211> 1024
<212> PRT
<213> Homo sapiens

<400> 15

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Tyr	Gly	Pro	Trp	Leu	Cys	Leu	Leu	Val	Ala	Leu	Ala	Leu	Asp	Val	Val
			20				25				30				
Arg	Val	Asp	Cys	Gly	Gln	Ala	Pro	Leu	Asp	Pro	Val	Tyr	Leu	Pro	Ala
		35				40				45					

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Ala Leu Glu Leu Leu Asp Ala Pro Glu His Phe Arg Val Gln Gln Val
     50                  55                  60
Gly His Tyr Pro Pro Ala Asn Ser Ser Leu Ser Ser Arg Ser Glu Thr
 65                  70                  75                  80
Phe Leu Leu Leu Gln Pro Trp Pro Arg Ala Gln Pro Leu Leu Arg Ala
                 85                  90                  95
Ser Tyr Pro Pro Phe Ala Thr Gln Gln Val Val Pro Pro Arg Val Thr
            100                 105                 110
Glu Pro His Gln Arg Pro Val Pro Trp Asp Val Arg Ala Val Ser Val
        115                 120                 125
Glu Ala Ala Val Thr Pro Ala Glu Pro Tyr Ala Arg Val Leu Phe His
    130                 135                 140
Leu Lys Gly Gln Asp Trp Pro Pro Gly Ser Gly Ser Leu Pro Cys Ala
145                 150                 155                 160
Arg Leu His Ala Thr His Pro Ala Gly Thr Ala His Gln Ala Cys Arg
                165                 170                 175
Phe Gln Pro Ser Leu Gly Ala Cys Val Val Glu Leu Glu Leu Pro Ser
            180                 185                 190
His Trp Phe Ser Gln Ala Ser Thr Thr Arg Ala Glu Leu Ala Tyr Thr
        195                 200                 205
Leu Glu Pro Ala Ala Glu Gly Pro Gly Gly Cys Gly Ser Gly Glu Glu
    210                 215                 220
Asn Asp Pro Gly Glu Gln Ala Leu Pro Val Gly Gly Val Glu Leu Arg
225                 230                 235                 240
Pro Ala Asp Pro Pro Gln Tyr Gln Glu Val Pro Leu Asp Glu Ala Val
                245                 250                 255
Thr Leu Arg Val Pro Asp Met Pro Val Arg Pro Gly Gln Leu Phe Ser
            260                 265                 270
Ala Thr Leu Leu Leu Arg His Asn Phe Thr Ala Ser Leu Leu Thr Leu
        275                 280                 285
Arg Ile Lys Val Lys Lys Gly Leu His Val Thr Ala Ala Arg Pro Ala
    290                 295                 300
Gln Pro Thr Leu Trp Thr Ala Lys Leu Asp Arg Phe Lys Gly Ser Arg
305                 310                 315                 320
His His Thr Thr Leu Ile Thr Cys His Arg Ala Gly Leu Thr Glu Pro
                325                 330                 335
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Asp Ser Ser Ser Pro Leu Glu Leu Ser Glu Phe Leu Trp Val Asp Phe
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Val Val Glu Asn Ser Thr Gly Gly Gly Val Ala Val Thr Arg Pro Val
        355                 360                 365
Thr Trp Gln Leu Glu Tyr Pro Gly Gln Ala Pro Glu Ala Glu Lys Asp
    370                 375                 380
Lys Met Val Trp Glu Ile Leu Val Ser Glu Arg Asp Ile Arg Ala Leu
385                 390                 395                 400
Ile Pro Leu Ala Lys Ala Glu Glu Leu Val Asn Thr Ala Pro Leu Thr
                405                 410                 415
Gly Val Pro Gln His Val Pro Val Arg Leu Val Thr Val Asp Gly Gly
            420                 425                 430
Gly Ala Leu Val Glu Val Thr Glu His Val Gly Cys Glu Ser Ala Asn
        435                 440                 445
Thr Gln Val Leu Gln Val Ser Glu Ala Cys Asp Ala Val Phe Val Ala
    450                 455                 460
Gly Lys Glu Ser Arg Gly Ala Arg Gly Val Arg Val Asp Phe Trp Trp
465                 470                 475                 480
Arg Arg Leu Arg Ala Ser Leu Arg Leu Thr Val Trp Ala Pro Leu Leu
                485                 490                 495
Pro Leu Arg Ile Glu Leu Thr Asp Thr Thr Leu Glu Gln Val Arg Gly
            500                 505                 510
Trp Arg Val Pro Gly Pro Ala Glu Gly Pro Ala Glu Pro Ala Ala Glu
        515                 520                 525
Ala Ser Asp Glu Ala Glu Arg Arg Ala Arg Gly Cys His Leu Gln Tyr
    530                 535                 540
Gln Arg Ala Gly Val Arg Phe Leu Ala Pro Phe Ala Ala His Pro Leu
545                 550                 555                 560
Asp Gly Gly Arg Arg Leu Thr His Leu Leu Gly Pro Asp Trp Leu Leu
                565                 570                 575
Asp Val Ser His Leu Val Ala Pro His Ala Arg Val Leu Asp Ser Arg
            580                 585                 590
Val Ala Ser Leu Glu Gly Gly Arg Val Val Val Gly Arg Glu Pro Gly
        595                 600                 605
Val Thr Ser Ile Glu Val Arg Ser Pro Leu Ser Asp Ser Ile Leu Gly
    610                 615                 620
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Glu Gln Ala Leu Ala Val Thr Asp Asp Lys Val Ser Val Leu Glu Leu
625                 630                 635                 640
Arg Val Gln Pro Val Met Gly Ile Ser Leu Thr Leu Ser Arg Gly Thr
                645                 650                 655
Ala His Pro Gly Glu Val Thr Ala Thr Cys Trp Ala Gln Ser Ala Leu
            660                 665                 670
Pro Ala Pro Lys Gln Glu Val Ala Leu Ser Leu Trp Leu Ser Phe Ser
        675                 680                 685
Asp His Thr Val Ala Pro Ala Glu Leu Tyr Asp Arg Arg Asp Leu Gly
    690                 695                 700
Leu Ser Val Ser Ala Glu Glu Pro Gly Ala Ile Leu Pro Ala Glu Glu
705                 710                 715                 720
Gln Gly Ala Gln Leu Gly Val Val Val Ser Gly Ala Gly Ala Glu Gly
                725                 730                 735
Leu Pro Leu His Val Ala Leu His Pro Pro Glu Pro Cys Arg Arg Gly
            740                 745                 750
Arg His Arg Val Pro Leu Ala Ser Gly Thr Ala Trp Leu Gly Leu Pro
        755                 760                 765
Pro Ala Ser Thr Pro Ala Pro Ala Leu Pro Ser Ser Pro Ala Trp Ser
    770                 775                 780
Pro Pro Ala Thr Glu Ala Thr Met Gly Gly Lys Arg Gln Val Ala Gly
785                 790                 795                 800
Ser Val Gly Gly Asn Thr Gly Val Arg Gly Lys Phe Glu Arg Ala Glu
                805                 810                 815
Glu Glu Ala Arg Lys Glu Glu Thr Glu Ala Arg Glu Glu Glu Glu Glu
            820                 825                 830
Glu Glu Glu Glu Met Val Pro Ala Pro Gln His Val Thr Glu Leu Glu
        835                 840                 845
Leu Gly Met Tyr Ala Leu Leu Gly Val Phe Cys Val Ala Ile Phe Ile
    850                 855                 860
Phe Leu Val Asn Gly Val Val Phe Val Leu Arg Tyr Gln Arg Lys Glu
865                 870                 875                 880
Pro Pro Asp Ser Ala Thr Asp Pro Thr Ser Pro Gln Pro His Asn Trp
                885                 890                 895
Val Trp Leu Gly Thr Asp Gln Glu Glu Leu Ser Arg Gln Leu Asp Arg
            900                 905                 910
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Gln Ser Pro Gly Pro Pro Lys Gly Glu Gly Ser Cys Pro Cys Glu Ser
915 920 925
Gly Gly Gly Gly Glu Ala Pro Thr Leu Ala Pro Gly Pro Pro Gly Gly
930 935 940
Thr Thr Ser Ser Ser Ser Thr Leu Ala Arg Lys Glu Ala Gly Gly Arg
945 950 955 960
Arg Lys Arg Val Glu Phe Val Thr Phe Val Pro Ala Pro Pro Ala Gln
965 970 975
Ser Pro Glu Glu Pro Val Gly Ala Pro Ala Val Gln Ser Ile Leu Val
980 985 990
Ala Gly Glu Glu Asp Ile Arg Trp Val Cys Glu Asp Met Gly Leu Lys
995 1000 1005
Asp Pro Glu Glu Leu Arg Asn Tyr Met Glu Arg Ile Arg Gly Ser Ser
1010 1015 1020

<210> 16
<211> 3072
<212> DNA
<213> Homo sapiens

<400> 16
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cggggcagct cc 3072

<210> 17
<211> 1020
<212> PRT
<213> Homo sapiens

<400> 17

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Leu Cys Leu Leu Val Ala Leu Ala Leu Asp Val Val Arg Val Asp Cys
            20                  25                  30
Gly Gln Ala Pro Leu Asp Pro Val Tyr Leu Pro Ala Ala Leu Glu Leu
        35                  40                  45
Leu Asp Ala Pro Glu His Phe Arg Val Gln Gln Val Gly His Tyr Pro
    50                  55                  60
Pro Ala Asn Ser Ser Leu Ser Ser Arg Ser Glu Thr Phe Leu Leu Leu
65                  70                  75                  80
Gln Pro Trp Pro Arg Ala Gln Pro Leu Leu Arg Ala Ser Tyr Pro Pro
                85                  90                  95
Phe Ala Thr Gln Gln Val Val Pro Pro Arg Val Thr Glu Pro His Gln
            100                 105                 110
Arg Pro Val Pro Trp Asp Val Arg Ala Val Ser Val Glu Ala Ala Val
        115                 120                 125
Thr Pro Ala Glu Pro Tyr Ala Arg Val Leu Phe His Leu Lys Gly Gln
    130                 135                 140
Asp Trp Pro Pro Gly Ser Gly Ser Leu Pro Cys Ala Arg Leu His Ala
145                 150                 155                 160
Thr His Pro Ala Gly Thr Ala His Gln Ala Cys Arg Phe Gln Pro Ser
                165                 170                 175
Leu Gly Ala Cys Val Val Glu Leu Glu Leu Pro Ser His Trp Phe Ser
            180                 185                 190
Gln Ala Ser Thr Thr Arg Ala Glu Leu Ala Tyr Thr Leu Glu Pro Ala
        195                 200                 205
Ala Glu Gly Pro Gly Gly Cys Gly Ser Gly Glu Glu Asn Asp Pro Gly
    210                 215                 220
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Glu Gln Ala Leu Pro Val Gly Gly Val Glu Leu Arg Pro Ala Asp Pro
225 230 235 240
Pro Gln Tyr Gln Glu Val Pro Leu Asp Glu Ala Val Thr Leu Arg Val
245 250 255
Pro Asp Met Pro Val Arg Pro Gly Gln Leu Phe Ser Ala Thr Leu Leu
260 265 270
Leu Arg His Asn Phe Thr Ala Ser Leu Leu Thr Leu Arg Ile Lys Val
275 280 285
Lys Lys Gly Leu His Val Thr Ala Ala Arg Pro Ala Gln Pro Thr Leu
290 295 300
Trp Thr Ala Lys Leu Asp Arg Phe Lys Gly Ser Arg His His Thr Thr
305 310 315 320
Leu Ile Thr Cys His Arg Ala Gly Leu Thr Glu Pro Asp Ser Ser Ser
325 330 335
Pro Leu Glu Leu Ser Glu Phe Leu Trp Val Asp Phe Val Val Glu Asn
340 345 350
Ser Thr Gly Gly Gly Val Ala Val Thr Arg Pro Val Thr Trp Gln Leu
355 360 365
Glu Tyr Pro Gly Gln Ala Pro Glu Ala Glu Lys Asp Lys Met Val Trp
370 375 380
Glu Ile Leu Val Ser Glu Arg Asp Ile Arg Ala Leu Ile Pro Leu Ala
385 390 395 400
Lys Ala Glu Glu Leu Val Asn Thr Ala Pro Leu Thr Gly Val Pro Gln
405 410 415
His Val Pro Val Arg Leu Val Thr Val Asp Gly Gly Gly Ala Leu Val
420 425 430
Glu Val Thr Glu His Val Gly Cys Glu Ser Ala Asn Thr Gln Val Leu
435 440 445
Gln Val Ser Glu Ala Cys Asp Ala Val Phe Val Ala Gly Lys Glu Ser
450 455 460
Arg Gly Ala Arg Gly Val Arg Val Asp Phe Trp Trp Arg Arg Leu Arg
465 470 475 480
Ala Ser Leu Arg Leu Thr Val Trp Ala Pro Leu Leu Pro Leu Arg Ile
485 490 495
Glu Leu Thr Asp Thr Thr Leu Glu Gln Val Arg Gly Trp Arg Val Pro
500 505 510

Gly Pro Ala Glu Gly Pro Ala Glu Pro Ala Ala Glu Ala Ser Asp Glu
515 520 525
Ala Glu Arg Arg Ala Arg Gly Cys His Leu Gln Tyr Gln Arg Ala Gly
530 535 540
Val Arg Phe Leu Ala Pro Phe Ala Ala His Pro Leu Asp Gly Gly Arg
545 550 555 560
Arg Leu Thr His Leu Leu Gly Pro Asp Trp Leu Leu Asp Val Ser His
565 570 575
Leu Val Ala Pro His Ala Arg Val Leu Asp Ser Arg Val Ala Ser Leu
580 585 590
Glu Gly Gly Arg Val Val Val Gly Arg Glu Pro Gly Val Thr Ser Ile
595 600 605
Glu Val Arg Ser Pro Leu Ser Asp Ser Ile Leu Gly Glu Gln Ala Leu
610 615 620
Ala Val Thr Asp Asp Lys Val Ser Val Leu Glu Leu Arg Val Gln Pro
625 630 635 640
Val Met Gly Ile Ser Leu Thr Leu Ser Arg Gly Thr Ala His Pro Gly
645 650 655
Glu Val Thr Ala Thr Cys Trp Ala Gln Ser Ala Leu Pro Ala Pro Lys
660 665 670
Gln Glu Val Ala Leu Ser Leu Trp Leu Ser Phe Ser Asp His Thr Val
675 680 685
Ala Pro Ala Glu Leu Tyr Asp Arg Arg Asp Leu Gly Leu Ser Val Ser
690 695 700
Ala Glu Glu Pro Gly Ala Ile Leu Pro Ala Glu Glu Gln Gly Ala Gln
705 710 715 720
Leu Gly Val Val Val Ser Gly Ala Gly Ala Glu Gly Leu Pro Leu His
725 730 735
Val Ala Leu His Pro Pro Glu Pro Cys Arg Arg Gly Arg His Arg Val
740 745 750
Pro Leu Ala Ser Gly Thr Ala Trp Leu Gly Leu Pro Pro Ala Ser Thr
755 760 765
Pro Ala Pro Ala Leu Pro Ser Ser Pro Ala Trp Ser Pro Pro Ala Thr
770 775 780
Glu Ala Thr Met Gly Gly Lys Arg Gln Val Ala Gly Ser Val Gly Gly
785 790 795 800

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Asn Thr Gly Val Arg Gly Lys Phe Glu Arg Ala Glu Glu Glu Ala Arg
                805                 810                 815
Lys Glu Glu Thr Glu Ala Arg Glu Glu Glu Glu Glu Glu Glu Glu Glu
            820                 825                 830
Met Val Pro Ala Pro Gln His Val Thr Glu Leu Glu Leu Gly Met Tyr
        835                 840                 845
Ala Leu Leu Gly Val Phe Cys Val Ala Ile Phe Ile Phe Leu Val Asn
    850                 855                 860
Gly Val Val Phe Val Leu Arg Tyr Gln Arg Lys Glu Pro Pro Asp Ser
865                 870                 875                 880
Ala Thr Asp Pro Thr Ser Pro Gln Pro His Asn Trp Val Trp Leu Gly
                885                 890                 895
Thr Asp Gln Glu Glu Leu Ser Arg Gln Leu Asp Arg Gln Ser Pro Gly
            900                 905                 910
Pro Pro Lys Gly Glu Gly Ser Cys Pro Cys Glu Ser Gly Gly Gly Gly
        915                 920                 925
Glu Ala Pro Thr Leu Ala Pro Gly Pro Pro Gly Gly Thr Thr Ser Ser
    930                 935                 940
Ser Ser Thr Leu Ala Arg Lys Glu Ala Gly Gly Arg Arg Lys Arg Val
945                 950                 955                 960
Glu Phe Val Thr Phe Val Pro Ala Pro Pro Ala Gln Ser Pro Glu Glu
                965                 970                 975
Pro Val Gly Ala Pro Ala Val Gln Ser Ile Leu Val Ala Gly Glu Glu
            980                 985                 990
Asp Ile Arg Trp Val Cys Glu Asp Met Gly Leu Lys Asp Pro Glu Glu
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Leu Arg Asn Tyr Met Glu Arg Ile Arg Gly Ser Ser
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<210> 18
<211> 3060
<212> DNA
<213> Homo sapiens

<400> 18
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<213> Homo sapiens

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<212> PRT
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35 40 45
Ala Leu Glu Leu Leu Asp Ala Pro Glu His Phe Arg Val Gln Gln Val
50 55 60
Gly His Tyr Pro Pro Ala Asn Ser Ser Leu Ser Ser Arg Ser Glu Thr
65 70 75 80
Phe Leu Leu Leu Gln Pro Trp Pro Arg Ala Gln Pro Leu Leu Arg Ala
85 90 95
Ser Tyr Pro Pro Phe Ala Thr Gln Gln Val Val Pro Pro Arg Val Thr
100 105 110
Glu Pro His Gln Arg Pro Val Pro Trp Asp Val Arg Ala Val Ser Val
115 120 125
Glu Ala Ala Val Thr Pro Ala Glu Pro Tyr Ala Arg Val Leu Phe His
130 135 140
Leu Lys Gly Gln Asp Trp Pro Pro Gly Ser Gly Ser Leu Pro Cys Ala
145 150 155 160
Arg Leu His Ala Thr His Pro Ala Gly Thr Ala His Gln Ala Cys Arg

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Phe Gln Pro Ser Leu Gly Ala Cys Val Val Glu Leu Glu Leu Pro Ser
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His Trp Phe Ser Gln Ala Ser Thr Thr Arg Ala Glu Leu Ala Tyr Thr
        195                 200                 205
Leu Glu Pro Ala Ala Glu Gly Pro Gly Gly Cys Gly Ser Gly Glu Glu
    210                 215                 220
Asn Asp Pro Gly Glu Gln Ala Leu Pro Val Gly Gly Val Glu Leu Arg
225                 230                 235                 240
Pro Ala Asp Pro Pro Gln Tyr Gln Glu Val Pro Leu Asp Glu Ala Val
                245                 250                 255
Thr Leu Arg Val Pro Asp Met Pro Val Arg Pro Gly Gln Leu Phe Ser
            260                 265                 270
Ala Thr Leu Leu Leu Gln His Asn Phe Thr Ala Ser Leu Leu Thr Leu
        275                 280                 285
Arg Ile Lys Val Lys Lys Gly Leu His Val Thr Ala Ala Arg Pro Ala
    290                 295                 300
Gln Pro Thr Leu Trp Thr Ala Lys Leu Asp Arg Phe Lys Gly Ser Arg
305                 310                 315                 320
His His Thr Thr Leu Ile Thr Cys His Arg Ala Gly Leu Thr Glu Pro
                325                 330                 335
Asp Ser Ser Pro Leu Glu Leu Ser Glu Phe Leu Trp Val Asp Phe Val
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Val Glu Asn Ser Thr Gly Gly Gly Val Ala Val Thr Arg Pro Val Thr
        355                 360                 365
Trp Gln Leu Glu Tyr Pro Gly Gln Ala Pro Glu Ala Glu Lys Asp Lys
    370                 375                 380
Met Val Trp Glu Ile Leu Val Ser Glu Arg Asp Ile Arg Ala Leu Ile
385                 390                 395                 400
Pro Leu Ala Lys Ala Glu Glu Leu Val Asn Thr Ala Pro Leu Thr Gly
                405                 410                 415
Val Pro Gln His Val Pro Val Arg Leu Val Thr Val Asp Gly Gly Gly
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Ala Leu Val Glu Val Thr Glu His Val Gly Cys Glu Ser Ala Asn Thr
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Gln Val Leu Gln Val Ser Glu Ala Cys Asp Ala Val Phe Val Ala Gly
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Leu Arg Ile Glu Leu Thr Asp Thr Thr Leu Glu Gln Val Arg Gly Trp
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Arg Val Pro Gly Pro Ala Glu Gly Pro Ala Glu Pro Ala Ala Glu Ala
        515                 520                 525
Ser Asp Glu Ala Glu Arg Arg Ala Arg Gly Cys His Leu Gln Tyr Gln
    530                 535                 540
Arg Ala Gly Val Arg Phe Leu Ala Pro Phe Ala Ala His Pro Leu Asp
545                 550                 555                 560
Gly Gly Arg Arg Leu Thr His Leu Leu Gly Pro Asp Trp Leu Leu Asp
                565                 570                 575
Val Ser His Leu Val Ala Pro His Ala Arg Val Leu Asp Ser Arg Val
            580                 585                 590
Ala Ser Leu Glu Gly Gly Arg Val Val Val Gly Arg Glu Pro Gly Val
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Thr Ser Ile Glu Val Arg Ser Pro Leu Ser Asp Ser Ile Leu Gly Glu
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Gln Ala Leu Ala Val Thr Asp Asp Lys Val Ser Val Leu Glu Leu Arg
625                 630                 635                 640
Val Gln Pro Val Met Gly Ile Ser Leu Thr Leu Ser Arg Gly Thr Ala
                645                 650                 655
His Pro Gly Glu Val Thr Ala Thr Cys Trp Ala Gln Ser Ala Leu Pro
            660                 665                 670
Ala Pro Lys Gln Glu Val Ala Leu Ser Leu Trp Leu Ser Phe Ser Asp
        675                 680                 685
His Thr Val Ala Pro Ala Glu Leu Tyr Asp Arg Arg Asp Leu Gly Leu
    690                 695                 700
Ser Val Ser Ala Glu Glu Pro Gly Ala Ile Leu Pro Ala Glu Glu Gln
705                 710                 715                 720
Gly Ala Gln Leu Gly Val Val Val Ser Gly Ala Gly Ala Glu Gly Leu
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Pro Leu His Val Ala Leu His Pro Pro Glu Pro Cys Arg Arg Gly Arg
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His Arg Val Pro Leu Ala Ser Gly Thr Ala Trp Leu Gly Leu Pro Pro
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Ala Ser Thr Pro Ala Pro Ala Leu Pro Ser Ser Pro Ala Trp Ser Pro
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Pro Ala Thr Glu Ala Thr Met Gly Gly Lys Arg Gln Val Ala Gly Ser
785                 790                 795                 800
Val Gly Gly Asn Thr Gly Val Arg Gly Lys Phe Glu Arg Ala Glu Glu
                805                 810                 815
Glu Ala Arg Lys Glu Glu Thr Lys Pro Arg Glu Glu Glu Glu Glu Glu
            820                 825                 830
Glu Glu Glu Met Val Pro Ala Pro Gln His Val Thr Glu Leu Glu Leu
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Gly Met Tyr Ala Leu Leu Gly Val Phe Cys Val Ala Ile Phe Ile Phe
    850                 855                 860
Leu Val Asn Gly Val Val Phe Val Leu Arg Tyr Gln Arg Lys Glu Pro
865                 870                 875                 880
Pro Asp Ser Ala Thr Asp Pro Thr Ser Pro Gln Pro His Asn Trp Val
                885                 890                 895
Trp Leu Gly Thr Asp Gln Glu Glu Leu Ser Arg Gln Leu Asp Arg Gln
            900                 905                 910
Ser Pro Gly Pro Pro Lys Gly Glu Gly Ser Cys Pro Cys Glu Ser Gly
        915                 920                 925
Gly Gly Gly Glu Ala Pro Thr Leu Ala Pro Gly Pro Pro Gly Gly Thr
    930                 935                 940
Thr Ser Ser Ser Ser Thr Leu Ala Arg Lys Glu Ala Gly Gly Arg Arg
945                 950                 955                 960
Lys Arg Val Glu Phe Val Thr Phe Ala Pro Ala Pro Pro Ala Gln Ser
                965                 970                 975
Pro Glu Glu Pro Val Gly Ala Pro Ala Val Gln Ser Ile Leu Val Ala
            980                 985                 990
Gly Glu Glu Asp Ile Arg Trp Val Cys Glu Asp Met Gly Leu Lys Asp
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<212> DNA
<213> Homo sapiens

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Gly Gln Ala Pro Leu Asp Pro Val Tyr Leu Pro Ala Ala Leu Glu Leu
35 40 45
Leu Asp Ala Pro Glu His Phe Arg Val Gln Gln Val Gly His Tyr Pro

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 65                  70                  75                  80
Gln Pro Trp Pro Arg Ala Gln Pro Leu Leu Arg Ala Ser Tyr Pro Pro
                 85                  90                  95
Phe Ala Thr Gln Gln Val Val Pro Pro Arg Val Thr Glu Pro His Gln
            100                 105                 110
Arg Pro Val Pro Trp Asp Val Arg Ala Val Ser Val Glu Ala Ala Val
        115                 120                 125
Thr Pro Ala Glu Pro Tyr Ala Arg Val Leu Phe His Leu Lys Gly Gln
    130                 135                 140
Asp Trp Pro Pro Gly Ser Gly Ser Leu Pro Cys Ala Arg Leu His Ala
145                 150                 155                 160
Thr His Pro Ala Gly Thr Ala His Gln Ala Cys Arg Phe Gln Pro Ser
                165                 170                 175
Leu Gly Ala Cys Val Val Glu Leu Glu Leu Pro Ser His Trp Phe Ser
            180                 185                 190
Gln Ala Ser Thr Thr Arg Ala Glu Leu Ala Tyr Thr Leu Glu Pro Ala
        195                 200                 205
Ala Glu Gly Pro Gly Gly Cys Gly Ser Gly Glu Glu Asn Asp Pro Gly
    210                 215                 220
Glu Gln Ala Leu Pro Val Gly Gly Val Glu Leu Arg Pro Ala Asp Pro
225                 230                 235                 240
Pro Gln Tyr Gln Glu Val Pro Leu Asp Glu Ala Val Thr Leu Arg Val
                245                 250                 255
Pro Asp Met Pro Val Arg Pro Gly Gln Leu Phe Ser Ala Thr Leu Leu
            260                 265                 270
Leu Gln His Asn Phe Thr Ala Ser Leu Leu Thr Leu Arg Ile Lys Val
        275                 280                 285
Lys Lys Gly Leu His Val Thr Ala Ala Arg Pro Ala Gln Pro Thr Leu
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Trp Thr Ala Lys Leu Asp Arg Phe Lys Gly Ser Arg His His Thr Thr
305                 310                 315                 320
Leu Ile Thr Cys His Arg Ala Gly Leu Thr Glu Pro Asp Ser Ser Pro
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Leu Glu Leu Ser Glu Phe Leu Trp Val Asp Phe Val Val Glu Asn Ser
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Ile Leu Val Ser Glu Arg Asp Ile Arg Ala Leu Ile Pro Leu Ala Lys
385                 390                 395                 400
Ala Glu Glu Leu Val Asn Thr Ala Pro Leu Thr Gly Val Pro Gln His
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Val Pro Val Arg Leu Val Thr Val Asp Gly Gly Gly Ala Leu Val Glu
            420                 425                 430
Val Thr Glu His Val Gly Cys Glu Ser Ala Asn Thr Gln Val Leu Gln
        435                 440                 445
Val Ser Glu Ala Cys Asp Ala Val Phe Val Ala Gly Lys Glu Ser Arg
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Gly Ala Arg Gly Val Arg Val Asp Phe Trp Trp Arg Arg Leu Arg Ala
465                 470                 475                 480
Ser Leu Arg Leu Thr Val Trp Ala Pro Leu Leu Pro Leu Arg Ile Glu
                485                 490                 495
Leu Thr Asp Thr Thr Leu Glu Gln Val Arg Gly Trp Arg Val Pro Gly
            500                 505                 510
Pro Ala Glu Gly Pro Ala Glu Pro Ala Ala Glu Ala Ser Asp Glu Ala
        515                 520                 525
Glu Arg Arg Ala Arg Gly Cys His Leu Gln Tyr Gln Arg Ala Gly Val
    530                 535                 540
Arg Phe Leu Ala Pro Phe Ala Ala His Pro Leu Asp Gly Gly Arg Arg
545                 550                 555                 560
Leu Thr His Leu Leu Gly Pro Asp Trp Leu Leu Asp Val Ser His Leu
                565                 570                 575
Val Ala Pro His Ala Arg Val Leu Asp Ser Arg Val Ala Ser Leu Glu
            580                 585                 590
Gly Gly Arg Val Val Val Gly Arg Glu Pro Gly Val Thr Ser Ile Glu
        595                 600                 605
Val Arg Ser Pro Leu Ser Asp Ser Ile Leu Gly Glu Gln Ala Leu Ala
    610                 615                 620
Val Thr Asp Asp Lys Val Ser Val Leu Glu Leu Arg Val Gln Pro Val
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Met Gly Ile Ser Leu Thr Leu Ser Arg Gly Thr Ala His Pro Gly Glu
645 650 655
Val Thr Ala Thr Cys Trp Ala Gln Ser Ala Leu Pro Ala Pro Lys Gln
660 665 670
Glu Val Ala Leu Ser Leu Trp Leu Ser Phe Ser Asp His Thr Val Ala
675 680 685
Pro Ala Glu Leu Tyr Asp Arg Arg Asp Leu Gly Leu Ser Val Ser Ala
690 695 700
Glu Glu Pro Gly Ala Ile Leu Pro Ala Glu Glu Gln Gly Ala Gln Leu
705 710 715 720
Gly Val Val Val Ser Gly Ala Gly Ala Glu Gly Leu Pro Leu His Val
725 730 735
Ala Leu His Pro Pro Glu Pro Cys Arg Arg Gly Arg His Arg Val Pro
740 745 750
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785 790 795 800
Thr Gly Val Arg Gly Lys Phe Glu Arg Ala Glu Glu Glu Ala Arg Lys
805 810 815
Glu Glu Thr Lys Pro Arg Glu Glu Glu Glu Glu Glu Glu Glu Glu Met
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Val Pro Ala Pro Gln His Val Thr Glu Leu Glu Leu Gly Met Tyr Ala
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Val Val Phe Val Leu Arg Tyr Gln Arg Lys Glu Pro Pro Asp Ser Ala
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Ser Thr Leu Ala Arg Lys Glu Ala Gly Gly Arg Arg Lys Arg Val Glu

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Phe Val Thr Phe Ala Pro Ala Pro Pro Ala Gln Ser Pro Glu Glu Pro

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Val Gly Ala Pro Ala Val Gln Ser Ile Leu Val Ala Gly Glu Glu Asp

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Arg Asn Tyr Met Glu Arg Ile Arg Gly Ser Ser

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Arg Val Asp Cys Gly Gln Ala Pro Leu Asp Pro Val Tyr Leu Pro Ala
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Ala Leu Glu Leu Leu Asp Ala Pro Glu His Phe Arg Val Gln Gln Val
    50                  55                  60
Gly His Tyr Pro Pro Ala Asn Ser Ser Leu Ser Ser Arg Ser Glu Thr
65                  70                  75                  80
Phe Leu Leu Leu Gln Pro Trp Pro Arg Ala Gln Pro Leu Leu Arg Ala
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Ser Tyr Pro Pro Phe Ala Thr Gln Gln Val Val Pro Pro Arg Val Thr
            100                 105                 110
Glu Pro His Gln Arg Pro Val Pro Trp Asp Val Arg Ala Val Ser Val
        115                 120                 125
Glu Ala Ala Val Thr Pro Ala Glu Pro Tyr Ala Arg Val Leu Phe His
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Leu Lys Gly Gln Asp Trp Pro Pro Gly Ser Gly Ser Leu Pro Cys Ala
145                 150                 155                 160
Arg Leu His Ala Thr His Pro Ala Gly Thr Ala His Gln Ala Cys Arg
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Phe Gln Pro Ser Leu Gly Ala Cys Val Val Glu Leu Glu Leu Pro Ser
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His Trp Phe Ser Gln Ala Ser Thr Thr Arg Ala Glu Leu Ala Tyr Thr
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Leu Glu Pro Ala Ala Glu Gly Pro Gly Gly Cys Gly Ser Gly Glu Glu
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Asn Asp Pro Gly Glu Gln Ala Leu Pro Val Gly Gly Val Glu Leu Arg
225                 230                 235                 240
Pro Ala Asp Pro Pro Gln Tyr Gln Glu Val Pro Leu Asp Glu Ala Val
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Thr Leu Arg Val Pro Asp Met Pro Val Arg Pro Gly Gln Leu Phe Ser
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Ala Thr Leu Leu Leu Arg His Asn Phe Thr Ala Ser Leu Leu Thr Leu
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Gln Pro Thr Leu Trp Thr Ala Lys Leu Asp Arg Phe Lys Gly Ser Arg
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His His Thr Thr Leu Ile Thr Cys His Arg Ala Gly Leu Thr Glu Pro
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Asp Ser Ser Pro Leu Glu Leu Ser Glu Phe Leu Trp Val Asp Phe Val
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Val Glu Asn Ser Thr Gly Gly Gly Val Ala Val Thr Arg Pro Val Thr
        355                 360                 365
Trp Gln Leu Glu Tyr Pro Gly Gln Ala Pro Glu Ala Glu Lys Asp Lys
    370                 375                 380
Met Val Trp Glu Ile Leu Val Ser Glu Arg Asp Ile Arg Ala Leu Ile
385                 390                 395                 400
Pro Leu Ala Lys Ala Glu Glu Leu Val Asn Thr Ala Pro Leu Thr Gly
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Val Pro Gln His Val Pro Val Arg Leu Val Thr Val Asp Gly Gly Gly
            420                 425                 430
Ala Leu Val Glu Val Thr Glu His Val Gly Cys Glu Ser Ala Asn Thr
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Gln Val Leu Gln Val Ser Glu Ala Cys Asp Ala Val Phe Val Ala Gly
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Lys Glu Ser Arg Gly Ala Arg Gly Val Arg Val Asp Phe Trp Trp Arg
465                 470                 475                 480
Arg Leu Arg Ala Ser Leu Arg Leu Thr Met Trp Ala Pro Leu Leu Pro
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Arg Val Pro Gly Pro Ala Glu Gly Pro Ala Glu Pro Ala Ala Glu Ala
        515                 520                 525
Ser Asp Glu Ala Glu Arg Arg Ala Arg Gly Cys His Leu Gln Tyr Gln
    530                 535                 540
Arg Ala Gly Val Arg Phe Leu Ala Pro Phe Ala Ala His Pro Leu Asp
545                 550                 555                 560
Gly Gly Arg Arg Leu Thr His Leu Leu Gly Pro Asp Trp Leu Leu Asp
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Ala Ser Leu Glu Gly Gly Arg Val Val Val Gly Arg Glu Pro Gly Val
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Gln Ala Leu Ala Val Thr Asp Asp Lys Val Ser Val Leu Glu Leu Arg
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His Pro Gly Glu Val Thr Ala Thr Cys Trp Ala Gln Ser Ala Leu Pro
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Ala Pro Lys Gln Glu Val Ala Leu Ser Leu Trp Leu Ser Phe Ser Asp
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His Thr Val Ala Pro Ala Glu Leu Tyr Asp Arg Arg Asp Leu Gly Leu
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Ser Val Ser Ala Glu Glu Pro Gly Ala Ile Leu Pro Ala Glu Glu Gln
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Gly Ala Gln Leu Gly Val Val Val Ser Gly Ala Gly Ala Glu Gly Leu
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Pro Leu His Val Ala Leu His Pro Pro Glu Pro Cys Arg Arg Gly Arg
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His Arg Val Pro Leu Ala Ser Gly Thr Ala Trp Leu Gly Leu Pro Pro
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Ala Ser Thr Pro Ala Pro Ala Leu Pro Ser Ser Pro Ala Trp Ser Pro
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Pro Ala Thr Glu Ala Thr Met Gly Gly Lys Arg Gln Val Ala Gly Ser
785                 790                 795                 800
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Glu Glu Glu Met Val Pro Ala Pro Gln His Val Thr Glu Leu Glu Leu
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Gly Met Tyr Ala Leu Leu Gly Val Phe Cys Val Ala Ile Phe Ile Phe
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Trp Leu Gly Thr Asp Gln Glu Glu Leu Ser Arg Gln Leu Asp Arg Gln
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Ser Pro Gly Pro Pro Lys Gly Glu Gly Ser Cys Pro Cys Glu Ser Gly
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Gly Gly Gly Glu Ala Pro Thr Leu Ala Pro Gly Pro Pro Gly Gly Thr
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Thr Ser Ser Ser Ser Thr Leu Ala Arg Lys Glu Ala Gly Gly Arg Arg
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Lys Arg Val Glu Phe Val Thr Phe Ala Pro Ala Pro Pro Ala Gln Ser
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Pro Glu Glu Pro Val Gly Ala Pro Ala Val Gln Ser Ile Leu Val Ala
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Gly Glu Glu Asp Ile Arg Trp Val Cys Glu Asp Met Gly Leu Lys Asp
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Leu Asp Ala Pro Glu His Phe Arg Val Gln Gln Val Gly His Tyr Pro
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Pro Ala Asn Ser Ser Leu Ser Ser Arg Ser Glu Thr Phe Leu Leu Leu
65 70 75 80
Gln Pro Trp Pro Arg Ala Gln Pro Leu Leu Arg Ala Ser Tyr Pro Pro
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Phe Ala Thr Gln Gln Val Val Pro Pro Arg Val Thr Glu Pro His Gln
100 105 110
Arg Pro Val Pro Trp Asp Val Arg Ala Val Ser Val Glu Ala Ala Val
115 120 125
Thr Pro Ala Glu Pro Tyr Ala Arg Val Leu Phe His Leu Lys Gly Gln
130 135 140
Asp Trp Pro Pro Gly Ser Gly Ser Leu Pro Cys Ala Arg Leu His Ala
145 150 155 160
Thr His Pro Ala Gly Thr Ala His Gln Ala Cys Arg Phe Gln Pro Ser
165 170 175

Leu Gly Ala Cys Val Val Glu Leu Glu Leu Pro Ser His Trp Phe Ser
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Gln Ala Ser Thr Thr Arg Ala Glu Leu Ala Tyr Thr Leu Glu Pro Ala
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Ala Glu Gly Pro Gly Gly Cys Gly Ser Gly Glu Glu Asn Asp Pro Gly
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Glu Gln Ala Leu Pro Val Gly Gly Val Glu Leu Arg Pro Ala Asp Pro
225 230 235 240
Pro Gln Tyr Gln Glu Val Pro Leu Asp Glu Ala Val Thr Leu Arg Val
245 250 255
Pro Asp Met Pro Val Arg Pro Gly Gln Leu Phe Ser Ala Thr Leu Leu
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Lys Lys Gly Leu His Val Thr Ala Ala Arg Pro Ala Gln Pro Thr Leu
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Tyr Pro Gly Gln Ala Pro Glu Ala Glu Lys Asp Lys Met Val Trp Glu
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Pro Ala Glu Gly Pro Ala Glu Pro Ala Ala Glu Ala Ser Asp Glu Ala
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545                 550                 555                 560
Leu Thr His Leu Leu Gly Pro Asp Trp Leu Leu Asp Val Ser His Leu
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Val Ala Pro His Ala Arg Val Leu Asp Ser Arg Val Ala Ser Leu Glu
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Gly Gly Arg Val Val Val Gly Arg Glu Pro Gly Val Thr Ser Ile Glu
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Val Thr Ala Thr Cys Trp Ala Gln Ser Ala Leu Pro Ala Pro Lys Gln
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Glu Val Ala Leu Ser Leu Trp Leu Ser Phe Ser Asp His Thr Val Ala
        675                 680                 685
Pro Ala Glu Leu Tyr Asp Arg Arg Asp Leu Gly Leu Ser Val Ser Ala
    690                 695                 700
Glu Glu Pro Gly Ala Ile Leu Pro Ala Glu Glu Gln Gly Ala Gln Leu
705                 710                 715                 720
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Pro Lys Gly Glu Gly Ser Cys Pro Cys Glu Ser Gly Gly Gly Gly Glu
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Val Gly Ala Pro Ala Val Gln Ser Ile Leu Val Ala Gly Glu Glu Asp
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<211> 3057

<212> DNA

<213> Homo sapiens

<400> 28

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<400> 32
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